

CLAIMS

WHAT IS CLAIMED IS:

1. A user-activated switch comprising:
 - an electrode forming part of a capacitor, a user contact area adjacent the electrode defining a permittivity of the capacitor; and
 - a detection circuit measuring a capacitance of the capacitor and activating a switch based upon the measured capacitance.
2. The user-activated switch of claim 1 wherein the electrode is in a vehicle.
3. The user-activated switch of claim 2 wherein the electrode is on a vehicle steering wheel.
4. The user-activated switch of claim 2 wherein the switch is for activating a vehicle horn.
5. The user-activated switch of claim 1 further including :
 - a bridge circuit including the electrode, the bridge circuit being balanced when no user hand is detected near the electrode, the bridge circuit becoming unbalanced based upon the presence of a user hand near the electrode; and
 - a differential amplifier determining when the bridge circuit is unbalanced and activating the switch based upon whether the bridge circuit is balanced.

6. The user-activated switch of claim 5 further including an oscillator exciting the bridge circuit.
7. The user-activated switch of claim 1 wherein the switch is activated based upon a rate of change of the capacitance.
8. The user-activated switch of claim 1 wherein the electrode is mounted adjacent a user manual contact area.
9. The user-activated switch of claim 1 wherein the electrode is mounted adjacent a user hand grip area.
10. The user-activated switch of claim 1 wherein the electrode is mounted adjacent a user hand contact area adjacent a user hand contact surface of a power device, the switch deactivating the power device when no user hand is detected near the electrode.
11. The user-activated switch of claim 10 wherein the user hand contact surface is adjacent a user hand grip area.

12. A method for determining a presence of a user hand including the steps of:
 - a) measuring a change in permittivity of an area adjacent an electrode caused by the proximity of the user hand; and
 - b) activating a switch based upon the change measured in said step a).
13. The method of claim 12 further including the steps of:
 - c) measuring a rate of change in capacitance in said step a); and
 - d) activating the switch in said step b) based upon the rate of change measured in said step c).
14. The method of claim 13 wherein a vehicle horn is activated based by the switch in said step d).
15. The method of claim 12 wherein a vehicle accessory is activated by the switch in said step b).
16. The method of claim 12 wherein a vehicle horn is activated based by the switch in said step b).
17. The method of claim 12 wherein the switch is a manual, user-activated switch.
18. The method of claim 17 wherein the switch activates a vehicle accessory.

19. The method of claim 18 wherein the vehicle accessory is a vehicle light.
20. The method of claim 18 wherein the vehicle accessory is a vehicle horn.
21. The method of claim 12 wherein said step b) further includes the steps of:
 - c) enabling a device based upon the change in capacitance indicating that the hand is present; and
 - d) disabling the device based upon the change in capacitance indicating that the hand is not present.
22. The method of claim 21 wherein the capacitance adjacent the electrode is adjacent a user manual contact area, such that the switch is activated in said step b) based upon the proximity of the user hand to the user manual contact area.
23. The method of claim 22 wherein the capacitance adjacent the electrode is adjacent a user grip area, such that the switch is activated in said step b) based upon the proximity of the user hand to the user hand grip area.

24. A vehicle horn switch comprising:

an electrode mounted on a vehicle steering wheel, the electrode forming part of a capacitor, a capacitance of the capacitor changing based upon a presence or absence of a user hand adjacent the electrode; and

a detection circuit measuring the capacitance of the capacitor and activating the horn based upon the measured capacitance.

25. The vehicle horn switch of claim 24 wherein the detection circuit further includes:

a bridge circuit including the electrode, the bridge circuit being balanced when no user hand is detected near the electrode, the bridge circuit becoming unbalanced based upon the presence of the user hand near the electrode; and

a differential amplifier determining when the bridge circuit is unbalanced and activating the horn switch based upon whether the bridge circuit is balanced.

26. The vehicle horn switch of claim 24 wherein the capacitor is part of an oscillator oscillating at a first frequency when no hand is present adjacent the electrode and at a second frequency different from the first frequency when the hand is adjacent the electrode, the detection circuit activating the horn switch based upon the frequency of the oscillator.

27. The vehicle horn switch of claim 24 wherein the capacitance of the capacitor is changed by a change in permittivity of a medium in the capacitor, the

permittivity being changed by the presence or absence of the hand adjacent the electrode.